

**A NEW SPECIES OF THE SUBGENUS *SABETHOIDES* OF *SABETHES*  
(DIPTERA: CULICIDAE) FROM VENEZUELA AND BRAZIL**

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*Abstract.*—The adult male, pupa and larva of *Sabethes (Sabethoides) conditus*, n. sp., are described from localities in western Brazil and northern Venezuela. The species is distinguished from *Sabethes chloropterus* (von Humboldt), which it closely resembles in all life stages.

*Key Words:* Diptera, Culicidae, *Sabethes*, *Sabethoides*, new species, mosquito, Brazil, Venezuela

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Mosquitoes of subgenus *Sabethoides* Theobald of genus *Sabethes* Robineau-Desvoidy are some of the more common insects in Neotropical forests, yet they are poorly known and rarely studied. No significant taxonomic research has been done on the subgenus since Lane (1953). This is surprising since one of the species, *Sa. chloropterus* (von Humboldt), has repeatedly been found infected with St. Louis encephalitis virus (Galindo et al. 1959) and is known to transmit yellow fever virus to humans (Galindo et al. 1956). In addition to *Sa. chloropterus*, the subgenus includes *Sa. glaucodaemon* (Dyar and Shannon), *Sa. tridentatus* Cerqueira, and at least 2 undescribed species. With the addition of the new species described in this paper, *Sabethoides* now includes 4 formally recognized species.

The new species described here very closely resembles *Sa. chloropterus* in all life stages, and undoubtedly has been confused as this species in the past. For this

reason, future study may indicate that it is also a vector of arboviruses.

#### MATERIALS AND METHODS

This study is based on specimens borrowed from the National Museum of Natural History, Smithsonian Institution, Washington, DC. Observations of the adults were made under simulated natural light. Larval and pupal chaetotaxy were studied using a combination of bright field and differential interference contrast microscopy. Measurements and counts were taken from all specimens of the type series where the structures in question were present. Numbers in parentheses represent modes of the reported ranges unless indicated otherwise. The form of presentation, descriptive terminology and abbreviations used in the species description follow Harbach and Knight (1980, 1982) and recent papers published as part of an ongoing revision of the genus *Sabethes* (Harbach and Peyton 1991; Har-

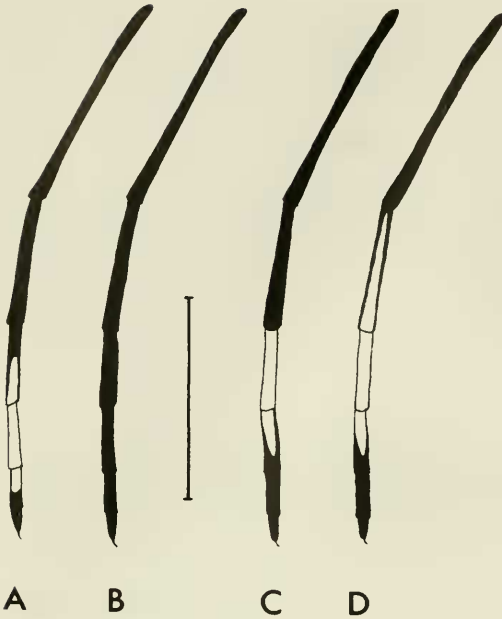


Fig. 1. Tibia and tarsus of midleg of *Sabethes (Sabethoides) conditus* (A, B) and *Sa. chloropterus* (C, D). A, C, Anterior; B, C, posterior. Scale = 2.0 mm.

bach 1991a, 1994, 1995a, b; Harbach and Petersen 1992; Hall et al. 1999).

***Sabethes (Sabethoides) conditus*, Moses, Howard, and Harbach, new species**  
(Figs. 1–4)

*Sabethes (Sabethoides)* sp 4 of Heinemann and Belkin 1978: 373.

This species exhibits the diagnostic characteristics of the subgenus noted by Harbach (1991a): midtarsus marked with white scaling; prespiracular, upper proepisternal and lower mesokatepisternal setae present; prealar setae absent; and legs without paddles.

Male.—Medium-sized mosquito with brilliant metallic-coloured scaling; scales of head capsule, thorax and abdomen very broad and flat; scales of vertex with different combinations of metallic blue, violet and green reflections depending on angle of light; scales of postgena, thoracic pleura and coxae silvery white; antepronotum ranging from dark gold to bright cerulean

blue depending on angle of light; scaling of postpronotum similar to pleura but with a slight golden hue; scutal and scutellar scales metallic gold with cerulean reflections; mesopostnotum without scales; proboscis and legs predominantly metallic blue and violet, proboscis darker; wing entirely dark-scaled with blue, gold and violet iridescence when viewed from certain angles; abdominal terga primarily metallic gold with narrow pale basal bands, from dorsal angles golden areas appear cerulean to green and basal bands mauve to violet, basal bands broader laterally and silvery-white in lateral view. *Head*: Eyes joined above and below. Occiput with transverse row of short semi-erect scales at back of head. Ocular setae short, dark, close to margin of eye; 2 long, bronzy, approximated interocular setae present. Antenna: Dark; length 1.29–1.36 mm ( $\bar{x}$  = 1.34 mm), significantly shorter than proboscis; pedicel large, surface silvery pubescent; flagellum rather strongly verticillate, proximal whorls with 9 or 10 setae, longest setae about 0.33 length of antenna. Clypeus and frons without setae and scales, dark. Proboscis long, slender, straight; length 2.00–2.10 mm ( $\bar{x}$  = 2.05 mm); distal 0.3 gradually expanded laterally, becoming twice as broad as proximal part; dark-scaled with ventral patch of yellowish white scaling extending 0.5 to 0.8 from base. Maxillary palpus short, about 0.08 length of proboscis; silvery-scaled dorsally, bare ventrally. *Thorax*: Integument brown. Dorsum with dark setae on anterior promontory (10, 11), antepronotum (11–13), supraalar area (10–15), scutellum (3,4 long setae on lateral lobes; 2 long setae projecting downward from midlobe) and mesopostnotum (4). Pleura with prespiracular (2), upper proepisternal (1), lower mesokatepisternal (1,2) and upper mesepimeral setae (9–11); prespiracular setae dark, others yellow or golden. Lower part of proepisternum without scales, scales on upper part contiguous with scales on anteprocoxal membrane; scales present on upper portion of postprocoxal membrane; mesopleuron with scales

covering all but lower anterior margin of mesokatepisternum, extreme dorsal margin of postspiracular area, narrow ventral and upper posterior margins of mesepimeron and mesomeron; scales absent from metapleuron, metameron and postmetacoxal membrane. *Wing*: Length 3.2 mm; dorsal scales broader and slightly asymmetrical on anterior and distal veins; alula with fine piliform scales on margin distally; calypters without setae. *Halter*: Scabellum without scales, integument pale; pedicel and capitellum dark-scaled. *Legs*: Coxae and trochanters with silvery-white scales, trochanters with some dark scales dorsally at apex; femora dark above and golden below; all tibiae and fore- and hindtarsi entirely dark-scaled; anterior surface of midtarsus (Fig. 1) white-scaled from middle of tarsomere 2 to middle of tarsomere 4 (paratype from Brazil with white scaling encircling tarsomere 3 and part of 4). Forefemur about 1.2 length of proboscis, same length as midfemur, about 1.3 length of hindfemur; hindtibia about as long as hindfemur, hindtarsomere 1 about 1.2 length of hindfemur. Ungues small, simple, black. *Abdomen*: Coloration as noted above, sternal scales distinctly larger and less recumbent than tergal scales. *Genitalia* (Fig. 2): Tergum VIII (ventral in position; not illustrated) with deep V-shaped emargination at middle of posterior margin, posterior border on either side of emargination with 3 or 4 irregular rows of long close-set setae, posterior half of surface before setae covered with recumbent spatulate scales that rather abruptly grade into a cluster of much larger scales on posterolateral corners, scales of cluster about half length of marginal setae. Tergum and sternum IX fused laterally, forming a complete ring of sclerotization; ninth tergal lobes small, not produced, each bearing 3 flattened setae with apices bent laterad; interlobular bridge moderately broad. Gonocoxite stout, width more than half length in lateral view, tapered in distal third, tergomesal surface membranous, distal sternal area covered with scales and

short setae, bearing 3 long tergomesal setae below basal mesal lobe; basal mesal lobe of irregular shape, roughly trapezoidal in ventral (tergal) view, partly covered with small slender setae and bearing 2 large setae at caudolateral angle. Gonostylus (side view) large, about two-thirds length of gonocoxite; stem stout, short, less than half length of head; head as illustrated, bearing 5 well developed lobes (A, C, E, M, M'), a slightly produced lobe B and an elongate tergal fimbriate process; lobe A, elongate tapered process arising tergomesal of base of lobe M, bearing several short stout setae at apex; lobe E, rather short conical lobe borne mesally at bases of lobes A and M, with large blade-like seta and 2 smaller needle-like setae at apex; lobe B, lateral minutely spiculate swelling associated with sternomesal margin of lobe E, bearing 3 large sternally directed setae with distal ends flattened and expanded subapically; lobe M, irregular partially subdivided median apical lobe bearing broadly V-shaped tergal process with short striated arms and more proximal long slender tergally directed fimbriate process comprised of partially fused and coalesced filaments with free ends bending toward base of gonostylus; lobe M', elongate irregular process arising from sternolateral margin at base of lobe M, subapical tergolateral margin with several short thickened setae and more proximal small flattened sigmoidal seta, sternal margin with laterally compressed projection bearing a narrowed retrorse apex; lobe C, large mesally slanted process arising from sternal margin at base of lobe M', bearing pattern of decumbent spine-like spicules on mesal side of apical margin and cluster of long sternally directed filaments on lateral side at proximal end. Aedeagus longer than wide, widest in basal half; submedian tergal arms fused to form broad median tergal bridge; apical tergal arms fused to form narrow apical bridge; median sternal plate rather membranous, apex not markedly flared, hood-like. Proctiger (in lateral view) with broad basal sclerotization (tergum X); paraproct slender,

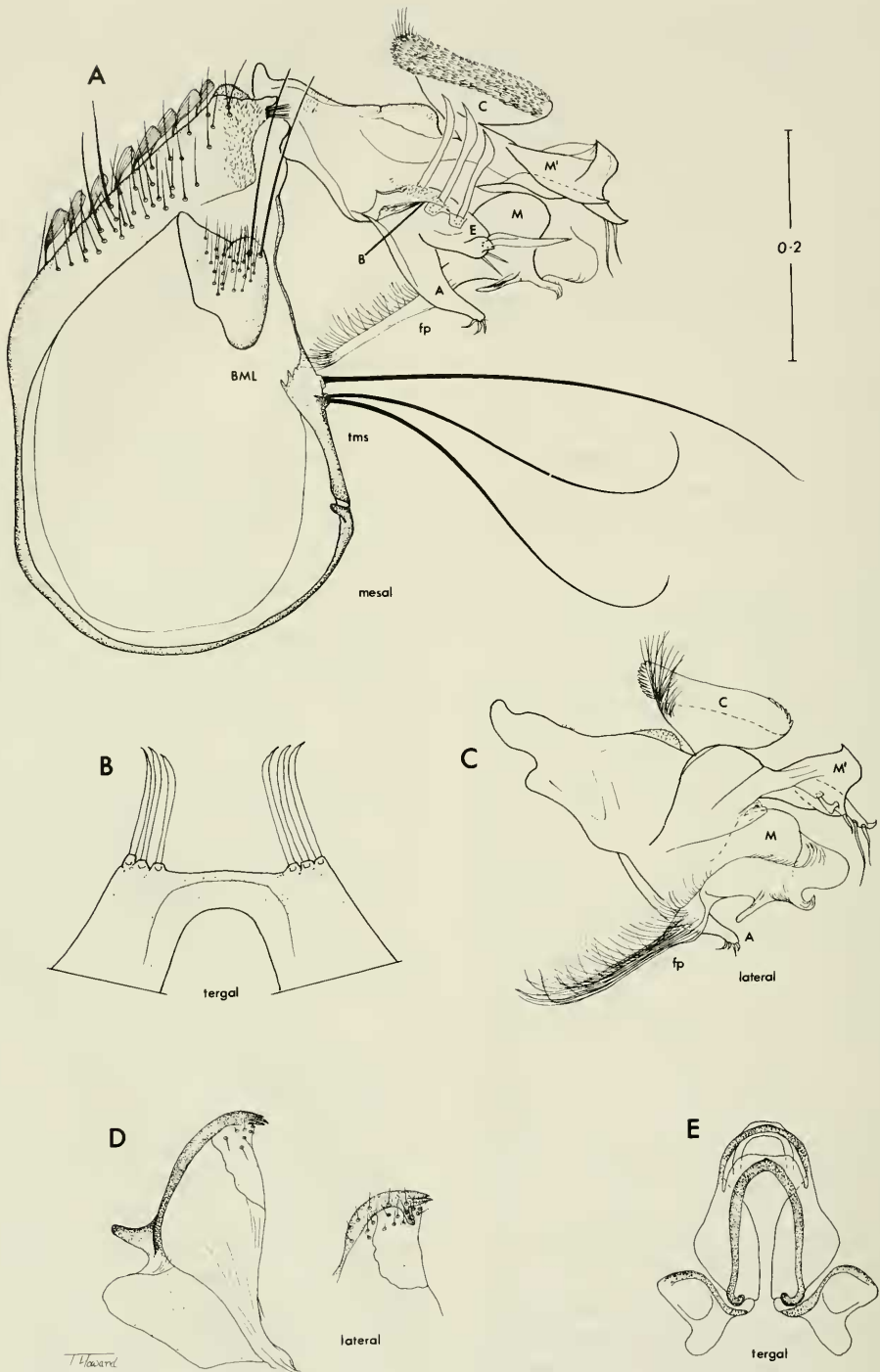


Fig. 2. Male genitalia of *Sabethes (Sabethoides) conditus*. Aspects as indicated for (A) gonocoxopodite; (B) tergum IX; (C) gonostylus; (D) proctiger; (E) aedeagus, with parameres attached. A, B, C, E, M and M' = gonostylar lobes; BML = basal mesal lobe; fp = fimbriate process; tms = tergomal setae. Scale in mm.



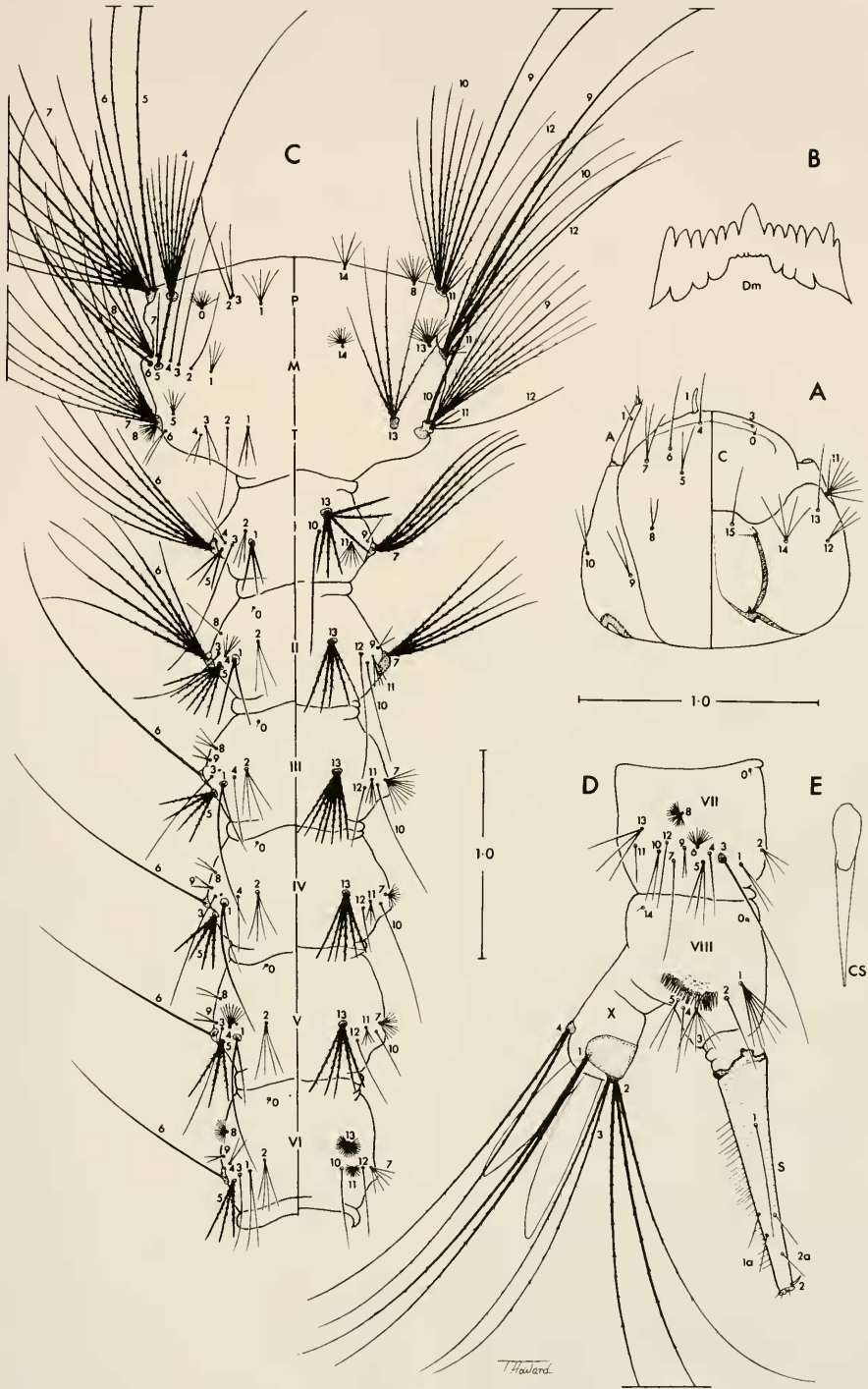


Fig. 3. Fourth-instar larva of *Sabethes (Sabethoides) conditus*. A, Head, dorsal (left) and ventral (right) aspects of left side. B, Dorsosentum. C, Thorax and abdominal segments I–VI, dorsal (left) and ventral (right) aspects of left side. D, Abdominal segments VII–X, left side. E, Comb scale. A = antenna; C = cranium; CS = comb scale; Dm = dorsosentum; P = prothorax; M = mesothorax; S = siphon; T = metathorax; I–X = abdominal segments; 1–15 = setal numbers for specified areas, e.g., seta 5-C. Scales in mm.

Table 1. Numbers of branches for setae of fourth-instar larvae of *Sabethes (Sabethoides) conditus*.

Seta	Head		Thorax		Abdominal segments	
	C	P	M	T	I	II
0	1	10-13	—	—	—	1
1	1	5,6(5,6)	3-5(4)	3	2,3(3)	2
2	—	1	1	1	2,3(2,3)	3,4(3)
3	1	2	1	2,3(2)	1	1
4	1	6-9(7)	1	2-4(2)	2-4(3)	4-6(4)
5	2	1,2(1)	1	3-5(3)	3	5,6(6)
6	1	2	1	1-3(2)	5,6(6)	5-8(5)
7	3-5(3)	7,10(10)	1	10-12(10)	5-7(5)	4-6(6)
8	2,3(2)	9-11(10)	5,6(6)	10-12(10)	—	1,2(1)
9	2	2,3(2)	1,3(1)	7,8(7,8)	1	2
10	1,2(2)	6-8(7)	5,6(5)	1	1	1
11	6-9(9)	1,2(2)	1,2(2)	1,2(1)	6-8(7)	4
12	3,4(3)	1	1	1	—	1
13	1	—	13-16	5,6(6)	6,7(6)	5-7(6)
14	4,5(5)	2-4(4)	12-19(19)	—	—	—
15	1-3(1)	—	—	—	—	—

apex with 2 or 3 appressed teeth, rather large subapical area distinctly sclerotized, bearing 6-23 cercal setae.

Female.—Not definitely associated with the male (see Systematics, below); 2 presumed females from Brazil resemble the males from Venezuela except for the absence of a pale patch on the ventral surface of the proboscis and in having slightly more extensive pale scaling on the anterior surface of the midtarsus, extending from proximal 0.2 of tarsomere 2 to apex of 4.

Egg.—Unknown.

Larva, fourth instar (Fig. 3).—Exhibiting the subgeneric characters noted by Harbach 1991a; similar to *Sa. chloropterus* (cf. Fig. 4 in Harbach 1991b); character and placement of setae as figured, numbers of branches in Table 1. *Head*: Slightly wider than long, widest in posterior half; length about 1.0 mm; width about 1.3 mm. Occipital foramen widely V-shaped with arms extending dorsolaterally to point laterad of level of seta 9-C, margins heavily tanned, ventrocaudal margin with collar-like edge. Anterior margin of labiogula weakly denticulate; hypostomal suture complete, gently curved. Dorsomentum (Fig. 3B) short, with 6,7 teeth on either side of median

tooth, median tooth and most lateral tooth larger than others. Maxilla, including apical tooth, about half length of head, with 8-10 lateral teeth, first lateral tooth larger than the others which become progressively smaller. Setae 4,6-C single, simple; 7-C usually triple; 9-C inserted at level distinctly posterior to 10-C; 10-C single or double; 14-C without thickened branches; 15-C inserted cephalad of 14-C near anterior margin of labiogula, long with 1-3(1) branches. *Antenna*: Short, cylindrical; slightly tapered distally, length about 0.28 mm. Seta 1-A single, simple, borne dorsally about 0.8 from base, length about 2 times width of antenna at point of insertion. *Thorax*: Integument hyaline, smooth. Setae 0,1,8,14-P, 1,13,14-M and 5,8-T with multiple short flexible branches; 11-P,M,T single or double, 11-P,M with slender flexible branches, 11-T with stiff thickened branches; 13-T with multiple branches, about length of thorax. *Abdomen*: Integument hyaline, smooth except for rows of minute spicules before comb. Seta 1-I,II with thickened branches, 1-III-V long, double with one branch markedly shorter; 2-I laterad of seta 1, 2-II-VII well mesad and anterior to seta 1; 6,7-I,II similar, strongly developed with multiple

Table 1. Continued.

Abdominal segments						
III	IV	V	VI	VII	VIII	X
1	1	1	1	1	1	—
2	2	2	2	2,3(2)	5–8(5)	2
3,4(3,4)	3,4(4)	3,5(3,5)	3,4(3)	2,3(2)	1	3,4(3,4)
1	1	1	1	1	6,7(6,7)	2
1	1	8–11(8)	1,2(1)	1	1	2
4,5(4,5)	3,4(4)	3,4(3)	2,3(2)	2–5(3)	2	—
1	1	1	1	10–14(13)	—	—
9–12	11–16	11–13(12)	5–8(7)	1	—	—
2,3(3)	2	1,2(2)	14–17	19–25	1–S,	1
2,3(2,3)	2,3(2)	2	1,2(1,2)	2	1a–S,	1
1	1	1,2(1)	1	1,2(2)	2a–S,	1
4,5(4,5)	3,4(3)	2–6	15–21	1	—	—
1	1	1	1	1	—	—
5–7(7)	5–6(5,6)	5,6(5)	29–34(29)	3,4(3)	—	—
—	—	—	—	—	1	—
—	—	—	—	—	—	—

aciculate branches, 6-III-VI long, single and progressively shorter; 5-II-VI and 13-I-V strongly developed, stellate, with stiff aciculate branches; 13-III-V apparently with more branches ( $\bar{x} = 17$ ) than *Sa. chloropterus* ( $\bar{x} = 12$ ); punctures present on segments III–V. *Segment VIII*: Comb a single row of 21–26 long slender spine-like scales (Fig. 3E) without fringe of minute spicules, scales close-set with flared bases sometimes partially joined. *Siphon*: Relatively long and slender, gradually tapered from base to apex; moderately tanned, surface more or less evenly covered with short rows of minute spicules; length about 1.3 mm, width at mid-length about 0.1 mm, index about 13. Pecten of about 30 fine filaments extending from below level of insertion of seta 1-S to point distal to seta 1a-S. Seta 1-S inserted 0.25 from base of siphon, 1a-S includes 1 or 2, usually 2, and 2a-S includes 2 or 3, usually 3, single setae; seta 2-S stout, slightly sinuous and minutely forked at tip (not apparent in Fig. 3D). *Segment X*: Saddle borne on posterodorsal quarter of segment, surface more or less evenly covered with rows of minute spicules; length about 0.2 mm; siphon/saddle index about

6.5. Setae 1–4-X equally well developed; 1,3,4-X double, 2-X usually triple (3,4).

*Pupa* (Fig. 4).—Exhibiting the subgeneric characters noted by Harbach 1991a; similar to *Sa. chloropterus*; character and positions of setae as illustrated, numbers of branches in Table 2. *Cephalothorax*: Lightly tanned. Seta 1-CT strongly developed, double, branches sigmoidally curved with hooked tips; 5-CT also well developed, double or triple, more often triple. *Trumpet*: Moderately tanned, slightly flattened but little if at all expanded laterally; length 0.32–0.39 mm ( $\bar{x} = 0.35$  mm), width at mid-length 0.11–0.14 mm, index 2.78–2.91 ( $\bar{x} = 2.81$ ); pinna short, length about 0.08 mm. *Abdomen*: Lightly tanned, terga and sterna darker anteriorly; length about 3.7 mm. Seta 1-I well developed, with about 80 terminal branches; 6,7-I long, 6-I single, longer than 7-I; 2-II-VII lateral to seta 1; 5-II,III with multiple branches, much shorter than 5-IV-VI, 5-IV-VI very long, more than twice length of following tergum; seta 4-IV short, with multiple branches, generally with more branches than in *Sa. chloropterus* which usually has 1 or 2; 10-II and 13-VI present on both sides in 2 available

Table 2. Numbers of branches for setae of pupae of *Sabethes (Sabethoides) conditus*.

Seta	Cephalothorax		Abdominal segments			
	CT	I	II	III	IV	
0	—	—	1	1	1	
1	2	10–14(10)*	5,6(6)	2,3(3)	2,3(2)	
2	2,3(3)	1	1	1	1	
3	2,3(2,3)	1,2(1)	1	1	2–4(3)	
4	2–4(3)	5–7(6)	5,6(5)	3–5(4)	2–6	
5	3	1	6–11	5–8(5)	1†	
6	1–3(2)	1	1	1	1	
7	2–4(3)	3	3,4(3,4)	4,6(4,6)	3–8	
8	3,4(3)	—	—	4–7	2	
9	1	1	1	1	1	
10	1,2(1)	a‡	1,2(1)	1,2(2)	2	
11	3,4(3)	1	2,3(2,3)	3	1,2(2)	
12	1,2(1,2)	—	—	—	—	
13	—	—	—	—	—	
14	—	—	—	—	—	

\* Primary branches.

† Presumed (see legend for Fig. 4).

‡ Alveolus only.

specimens, 13–VI quite variable in size and number of branches (3–12), apparently absent in *Sa. chloropterus*. *Genital lobe*: Lightly tanned, length (male only) about 0.36 mm. *Paddle*: Lightly tanned, asymmetrical, broadest at base, tapered distally, inner part narrow, less than 0.5 width of outer part, and minutely spiculate at apex; length about 0.7 mm, width at widest point about 0.45 mm, index 1.55.

*Systematics*.—*Sabethes conditus* resembles *Sa. tridentatus* and *Sa. glaucodaemon*, but differs in having distinctly shorter upper mesepimeral setae. These setae reach the lateral area of the mesopostnotum in *Sa. conditus* and extend to near the middle of the mesopostnotum in the other two species. The male of *Sa. conditus* also differs in the presence of ventral pale scaling on the proboscis, the pattern of pale scaling on the mid-tarsi, and the structure of the genitalia. *Sabethes conditus* has undoubtedly been misidentified as *Sa. chloropterus* in the past, mainly because most studies have focused on females that appear to be essentially isomorphic for the two species.

Knight and Stone (1977) list four junior synonyms for *Sa. chloropterus*: *Sabethes*

*nitidus* (Theobald), *Sabethoides confusus* (Theobald), *Sabethoides rangeli* (Surcouf and Gonzales-Rincones), and *Sabethoides imperfectus* (Bonne-Webster and Bonne). *Sabethes nitidus* was included in error because the lectotype designation by Belkin (1968) validated this nominal taxon as a distinct species of subgenus *Sabethes*, and the paralectotype male that Knight and Stone used as a basis for synonymy with *Sa. chloropterus* has no taxonomic status. We know from concurrent studies of *Sabethoides* that the holotype female of *Sabethoides imperfectus* is not conspecific with *Sa. chloropterus* and will be formally synonymized with another species in a future revision of the subgenus (by R.E.H.). The holotype females of *Sabethoides confusus* and *Sabethoides rangeli* are both in very poor condition, and even though *Sabethoides confusus* has no midlegs, both specimens clearly belong to a species of *Sabethoides* other than *Sa. glaucodaemon* or *Sa. tridentatus*. The holotype of *Sabethoides rangeli* has faint white scaling on the ventral surface of the proboscis (0.5 to 0.8 from base), a feature that is not known in females of *Sa. chloropterus* or the pre-



Table 2. Continued.

V	Abdominal segments				Paddle
	VI	VII	VIII	IX	P
1	1	1	1	—	—
2	2,3(2)	2,3(3)	—	—	—
1	1	1	—	—	—
2,3(2)	2,3(2)	3,4(3)	—	—	—
3-6(6)	2	1	1,2(1,2)	—	—
1	1	3-5(4)	—	—	—
1,2(2)	1,2(1,2)	5,6(5,6)	—	—	—
5-8	1,2(1,2)	1,2(1,2)	—	—	—
2,3(2)	6-9(7)	10-15(14)	—	—	—
1	1	13-15(14)	23-27(26)	—	—
1	1	2,3(2)	—	—	—
1,2(2)	4-6(4)	1	—	—	—
—	—	—	—	—	—
—	3-12	—	—	—	—
—	—	—	1	—	—

sumed females of *Sa. conditus* examined in this study. In the absence of any evidence to suggest that the holotype of either *Sabethoides confusus* or *Sabethoides rangeli* may be conspecific with *Sa. conditus* rather than *Sa. chloropterus*, these nominal forms are retained in synonymy with the latter species.

The male of *Sa. conditus* is easily distinguished from the male of *Sa. chloropterus* in having a lesser amount of pale scaling on the proboscis and midtarsus, and a very differently constructed gonostylus. The proboscis of *Sa. conditus* has ventral pale scaling extending from 0.5 to 0.8 beyond the base whereas in *Sa. chloropterus* it extends from 0.3 to 0.8 beyond the base. Similarly, the midtarsus has pale scaling on the anterior surfaces of tarsomeres 2-4 in *Sa. conditus* (also on the posterior surface of tarsomeres 3 and 4 in the paratype from Brazil) whereas it occurs on the anterior surfaces of tarsomeres 2 and 3 and the posterior surfaces of tarsomeres 1-4 in *Sa. chloropterus*.

The two females of *Sa. conditus* from Brazil are presumed to belong to this species because specimen numbers on the labels indicate that they were collected and reared from pupae along with the paratype

male. Apparently no collection records, additional data or associated pupal exuviae exist in the Smithsonian Institution to confirm this (J. Pecor, personal communication). The two females have the same pattern of pale scaling on the midlegs and appear to resemble verified females of *Sa. chloropterus* in overall habitus (the midlegs of *Sa. chloropterus* sometimes also have a variable amount of pale scaling on the posterior surfaces of tarsomeres 2-4). If these two specimens are females of *Sa. conditus*, then the female of this species is indistinguishable from the female of *Sa. chloropterus*.

No diagnostic characters were found to distinguish the larva and pupa of *Sa. conditus* from those of *Sa. chloropterus*, but some partially differential characteristics have been noted that may prove to be useful once additional material becomes available for further study. In the pupa, seta 4-IV has 2-6 branches whereas specimens of *Sa. chloropterus* only have 1 or 2 (usually 2), and seta 13-VII, a unique feature among mosquitoes, is present on both sides in the two available specimens of *Sa. conditus*. In the larva, the mean sum of branches of seta 13-III-V on one side is 17 compared to 12 in *Sa. chloropterus*, comb scales apparently

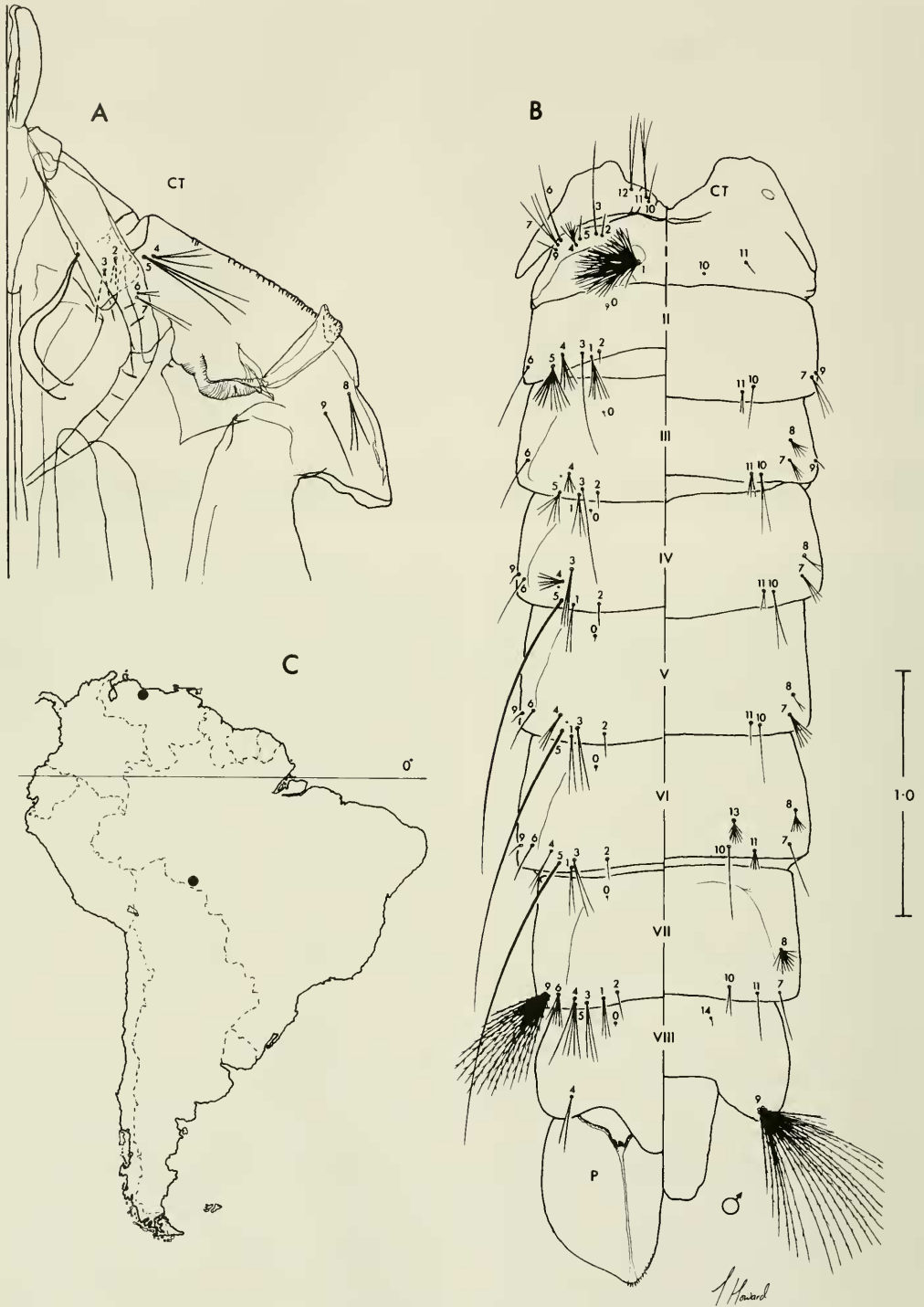


Fig. 4. A, B, Pupa of *Sabethes (Sabethoides) conditus*. A, Left side of cephalothorax, dorsal to right. B, Dorsal (left) and ventral (right) aspects of metathorax and abdomen. C, Localities in Venezuela and Brazil where type specimens of *Sa. conditus* were collected (see Material examined). Seta 5-IV was absent in available specimens and is drawn similar to 5-V, VI based on this development in *Sabethoides*. CT = cephalothorax; P = paddle; I-VIII = abdominal segments; 1-14 = setal numbers for specified areas, e.g., seta 3-I. Scale in mm.

lack the fringes of minute spicules that are present in *Sa. chloropterus*, and seta 4-X is double whereas it has 3 or 4 branches in *Sa. chloropterus*.

**Etymology.**—The specific name of *conditus* is a Latin adjective (masculine) meaning unseen or hidden. The name refers to the fact that the species undoubtedly has been mistaken for *Sa. chloropterus* in the past.

**Bionomics.**—The type specimens from Venezuela were collected as larvae found in brownish water contained in a small hole located 0.6 m above ground level in a leguminous tree. The treehole also contained larvae of *Culex (Anoedioporpa) conservator* Dyar and Knab. Nothing else is in definitely known about the bionomics of *Sa. conditus*, but it is likely that some of the information published about *Sa. chloropterus* actually applies to this species.

**Distribution.**—The type specimens were collected at the two localities indicated in Fig. 4C, one in northern Venezuela and the other in western Brazil. *Sabethes conditus* is undoubtedly widely distributed between and around these localities. Reports of *Sa. chloropterus* from this region may apply to *Sa. conditus* or a mixture of the two species.

**Material examined.**—Eleven specimens (3 ♂, 2 ♂ genitalia, 2 ♀, 2 larval exuviae, 2 pupal exuviae), including 2 larval rearings. VENEZUELA: Aragua, Ocumare de la Costa, Puerto Ocumare, just E of (19PFM3459), near sea level, 10 Jul 1969, J. A. Bergland and J. Valencia, 1 ♂ with associated larval and pupal exuviae and dissected genitalia on separate slides (VZ133-11), associated larval and pupal exuviae of lost ♂ (VZ133-22) and 1 ♂ (VZ133-1) (small treehole in partial shade 4 m above ground in leguminous tree in coconut plantation; water temporary, brown, turbid). BRAZIL: Rondônia, Costa Marques, 31 Jan 1992, USAMRU-B personnel, 1 ♂ (BR513 (65)-102) with dissected genitalia on microscope slide and 2 ♀ (BR513 (65)-100 and -102).

The males above comprise the type series of *Sa. conditus*. The holotype (VZ133-11), with associated larval and pupal exuviae and dissected genitalia on separate microscope slides, and 3 paratypes (VZ133-1, VZ133-22, BR513 (65)-102) are deposited in the National Museum of Natural History, Smithsonian Institution. The two females are excluded from the type series because they are not definitely associated with the males, and may not be conspecific with them.

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